FIG. 1

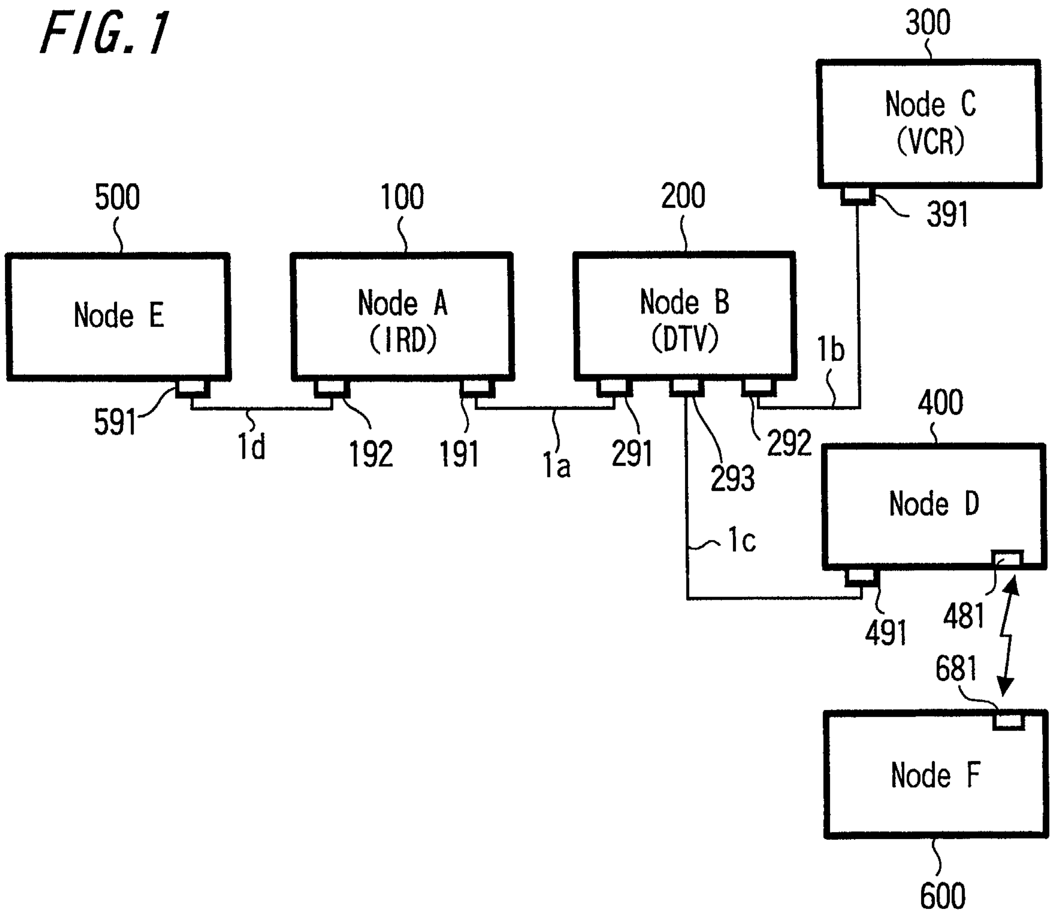
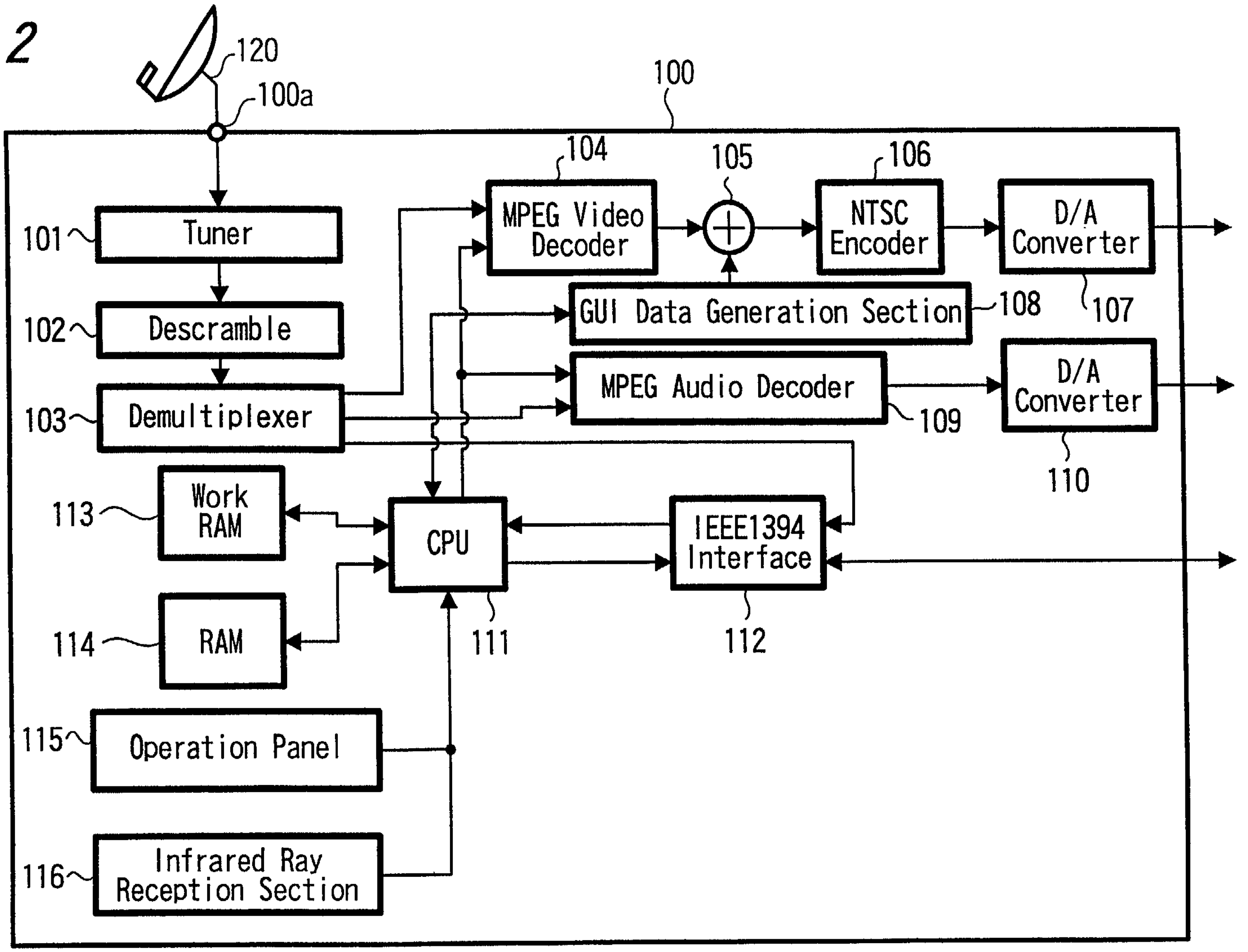

300
Node C
(VCR)
391
500
Node E
591
1d
100
Node A
(IRD)
192
191
1a
200
Node B
(DTV)
291
293
292
1b
1c
400
Node D
491
481
681
Node F
600

FIG. 2


120
100a
100
101
Tuner
102
Descramble
103
Demultiplexer
104
MPEG Video Decoder
105
106
NTSC Encoder
D/A Converter
107
GUI Data Generation Section
108
MPEG Audio Decoder
109
D/A Converter
110
113
Work RAM
114
RAM
CPU
111
IEEE1394 Interface
112
115
Operation Panel
116
Infrared Ray Reception Section

F/G.3

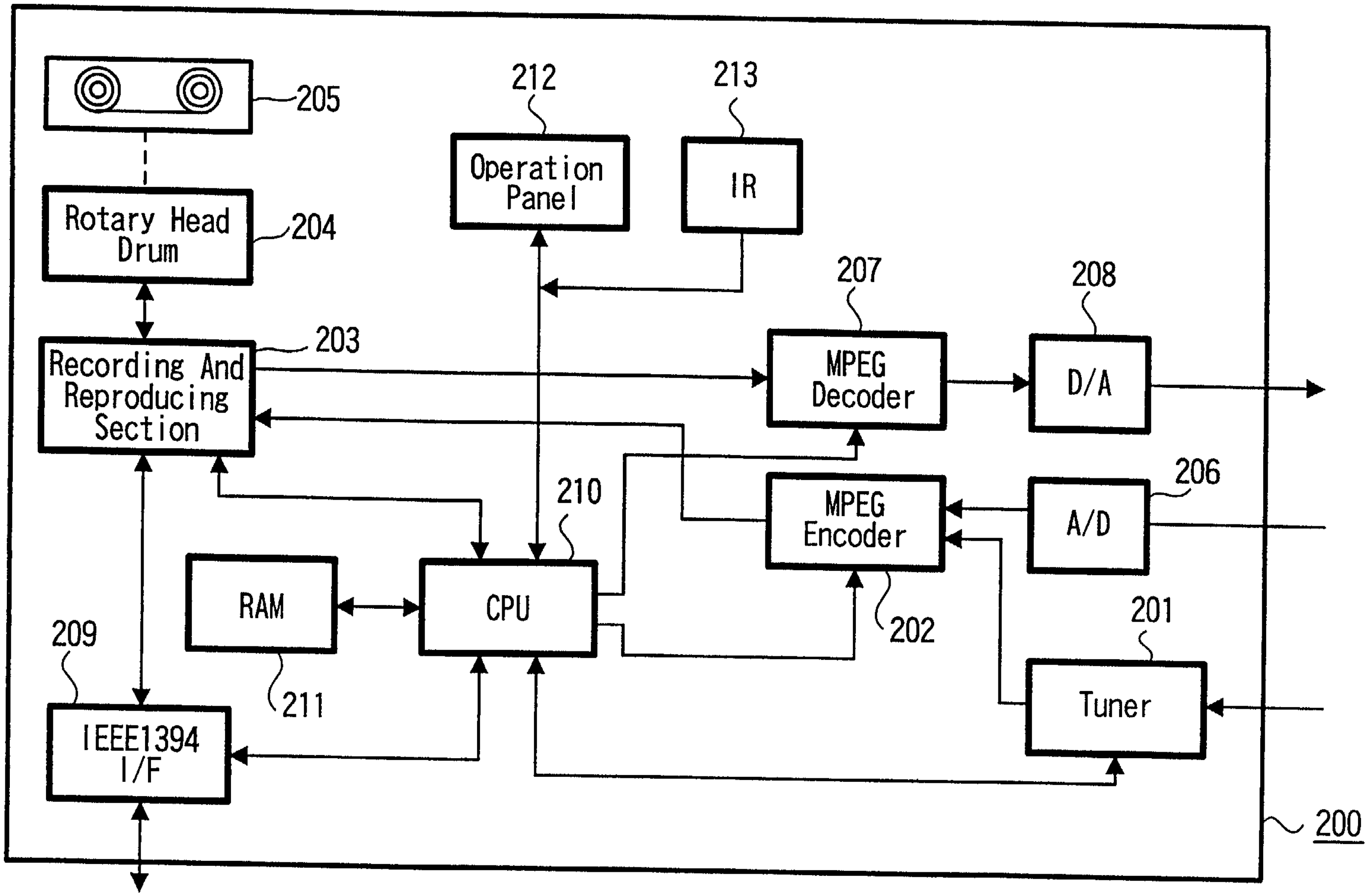

205
Rotary Head Drum
204
Recording And Reproducing Section
203
212
Operation Panel
213
IR
207
MPEG Decoder
208
D/A
210
CPU
RAM
211
MPEG Encoder
202
206
A/D
201
Tuner
209
IEEE1394 I/F
200

FIG. 4

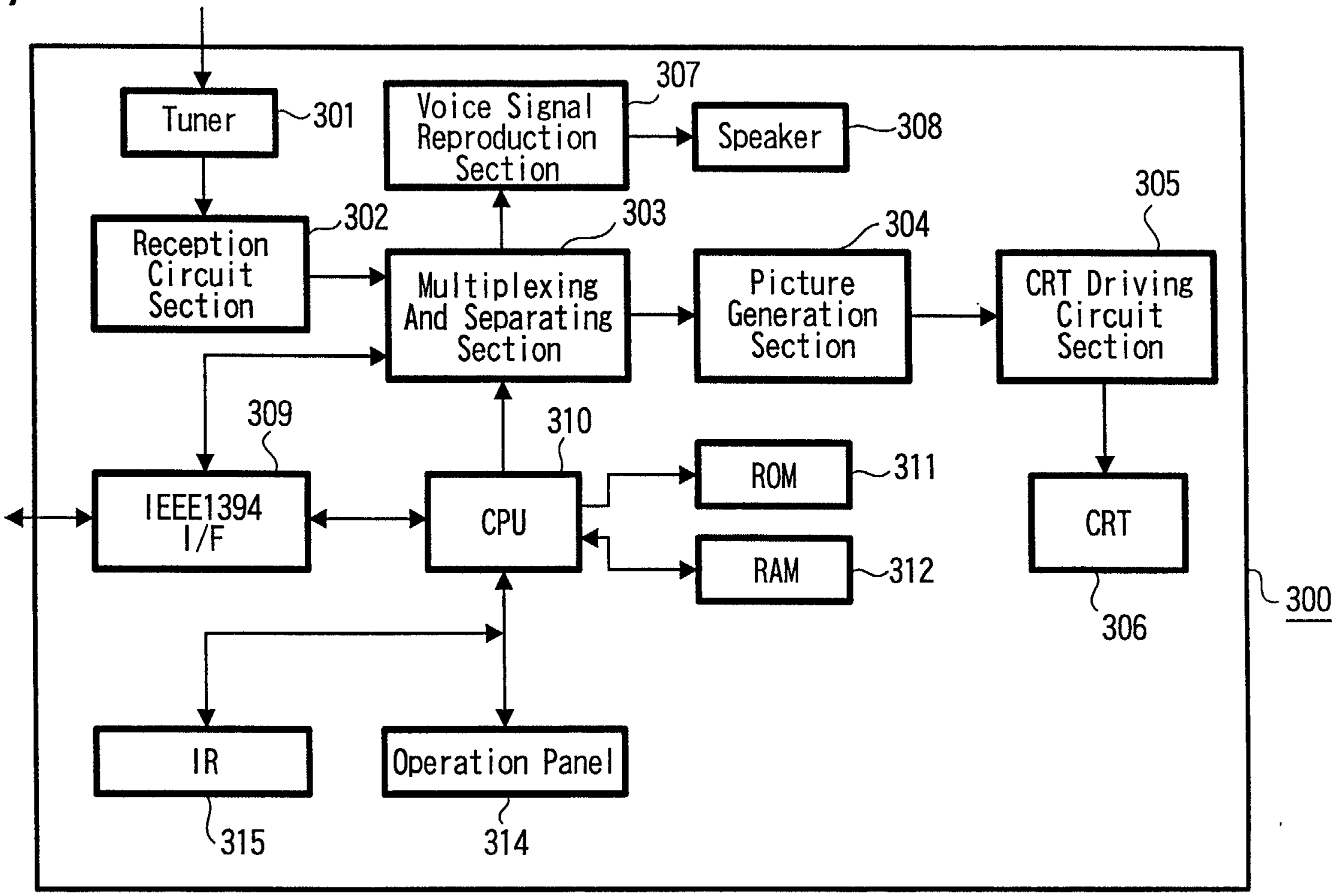

Tuner
301
Voice Signal Reproduction Section
307
Speaker
308
Reception Circuit Section
302
303
304
305
Multiplexing And Separating Section
Picture Generation Section
CRT Driving Circuit Section
309
310
IEEE1394 I/F
CPU
ROM
311
RAM
312
CRT
306
300
IR
315
Operation Panel
314

FIG. 5

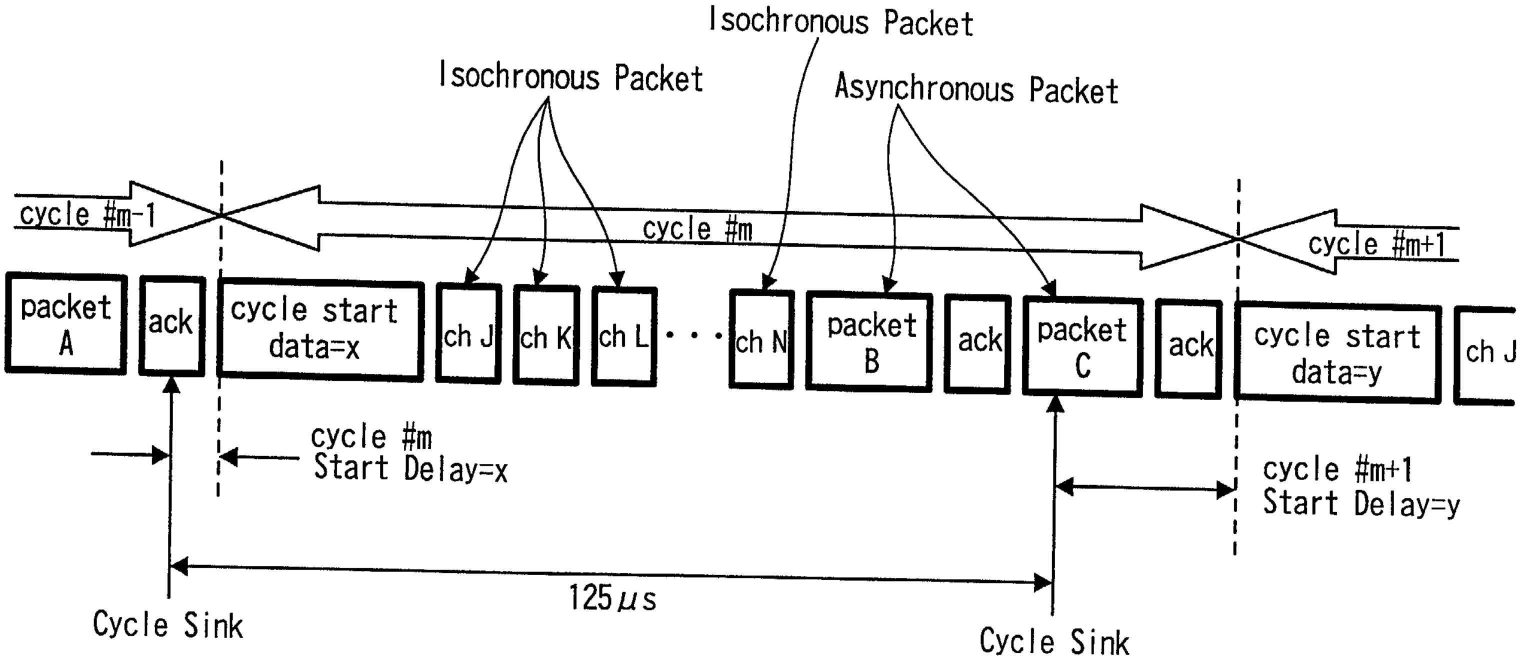

Isochronous Packet
Isochronous Packet
Asynchronous Packet
cycle #m-1
cycle #m
cycle #m+1
packet A
ack
cycle start data=x
ch J
ch K
ch L
ch N
packet B
ack
packet C
ack
cycle start data=y
ch J
cycle #m Start Delay=x
cycle #m+1 Start Delay=y
125μs
Cycle Sink
Cycle Sink

FIG. 6

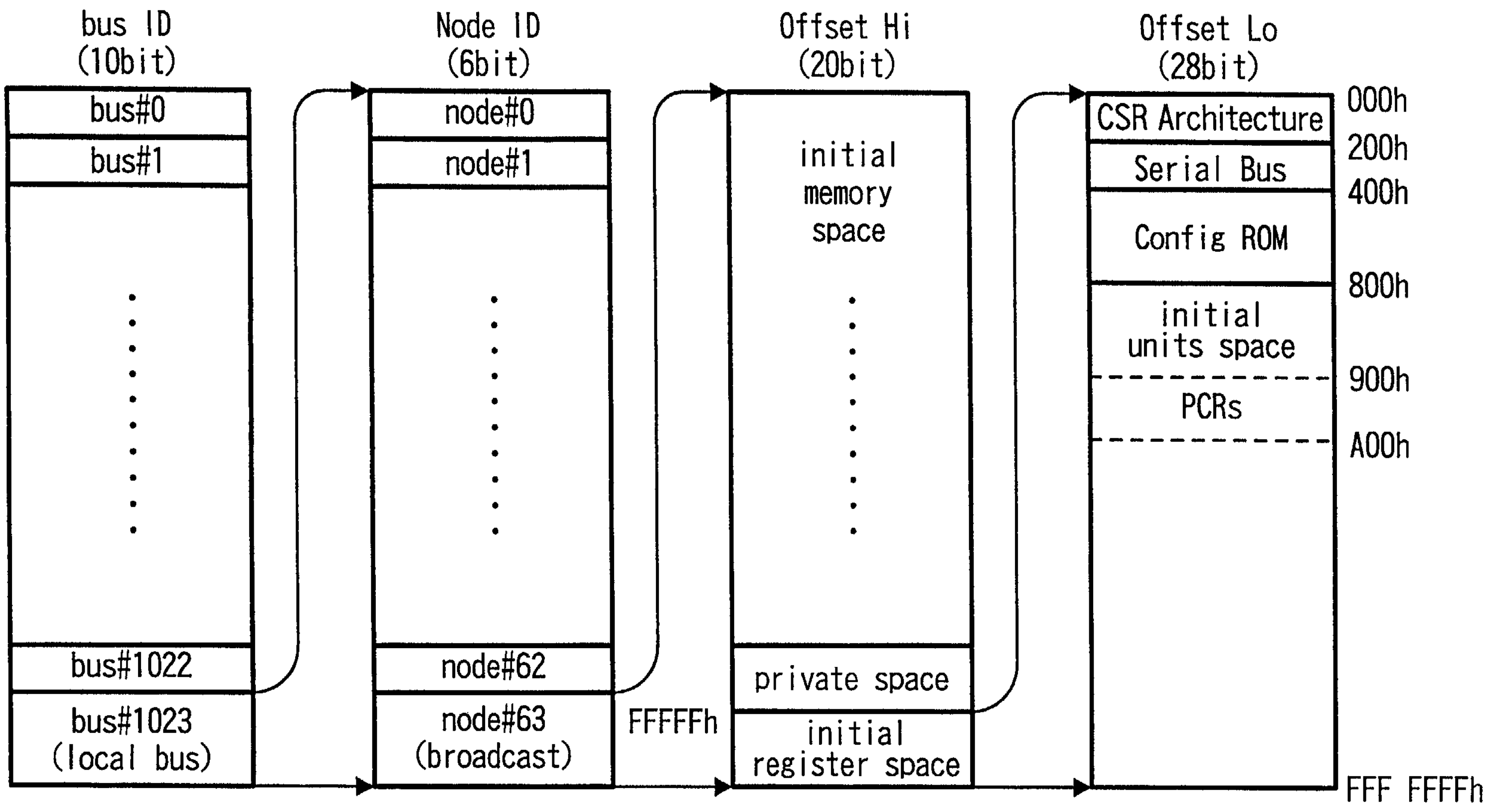
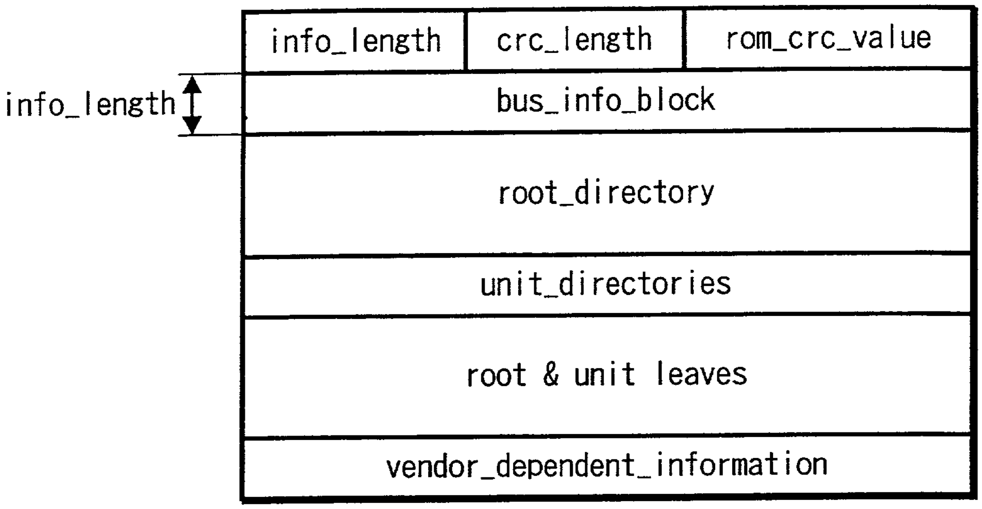

bus ID
(10bit)
bus#0
bus#1
bus#1022
bus#1023
(local bus)
Node ID
(6bit)
node#0
node#1
node#62
node#63
(broadcast)
FFFFFh
Offset Hi
(20bit)
initial
memory
space
private space
initial
register space
Offset Lo
(28bit)
CSR Architecture
Serial Bus
Config ROM
initial
units space
PCRs
000h
200h
400h
800h
900h
A00h
FFF FFFFh

FIG. 7

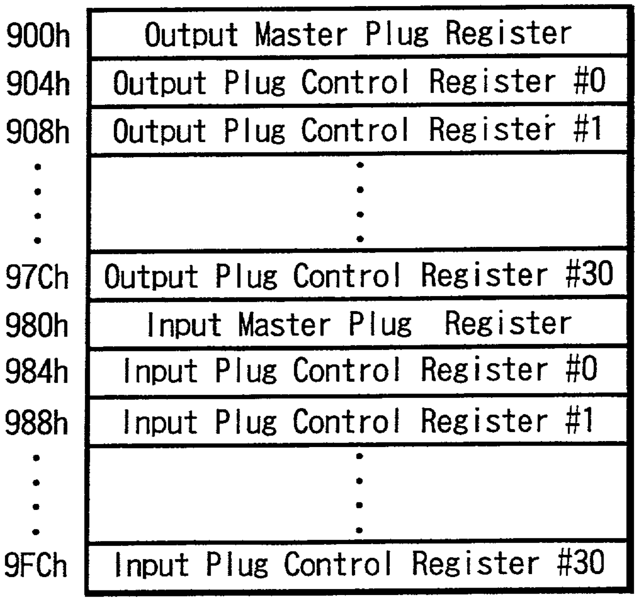
Offset	Name	Function
000h	STATE_CLEAR	State and control information
004h	STATE_SET	Set STATE_CLEAR bit
008h	NODE_IDs	Indicate 16-bit node ID
00Ch	RESET_START	Start command reset
018h-01Ch	SPLIT_TIMEOUT	Specify split maximum time
200h	CYCLE_TIME	Cycle time
210h	BUSY_TIMEOUT	Specify retry limitation
21Ch	BUS_MANAGER	Indicate bus manager ID
220h	BANDWIDTH_AVAILABLE	Indicate bands available for isochronous communications
224h-228h	CHANNELS_AVAILABLE	Indicate available state of each channel

FIG.8



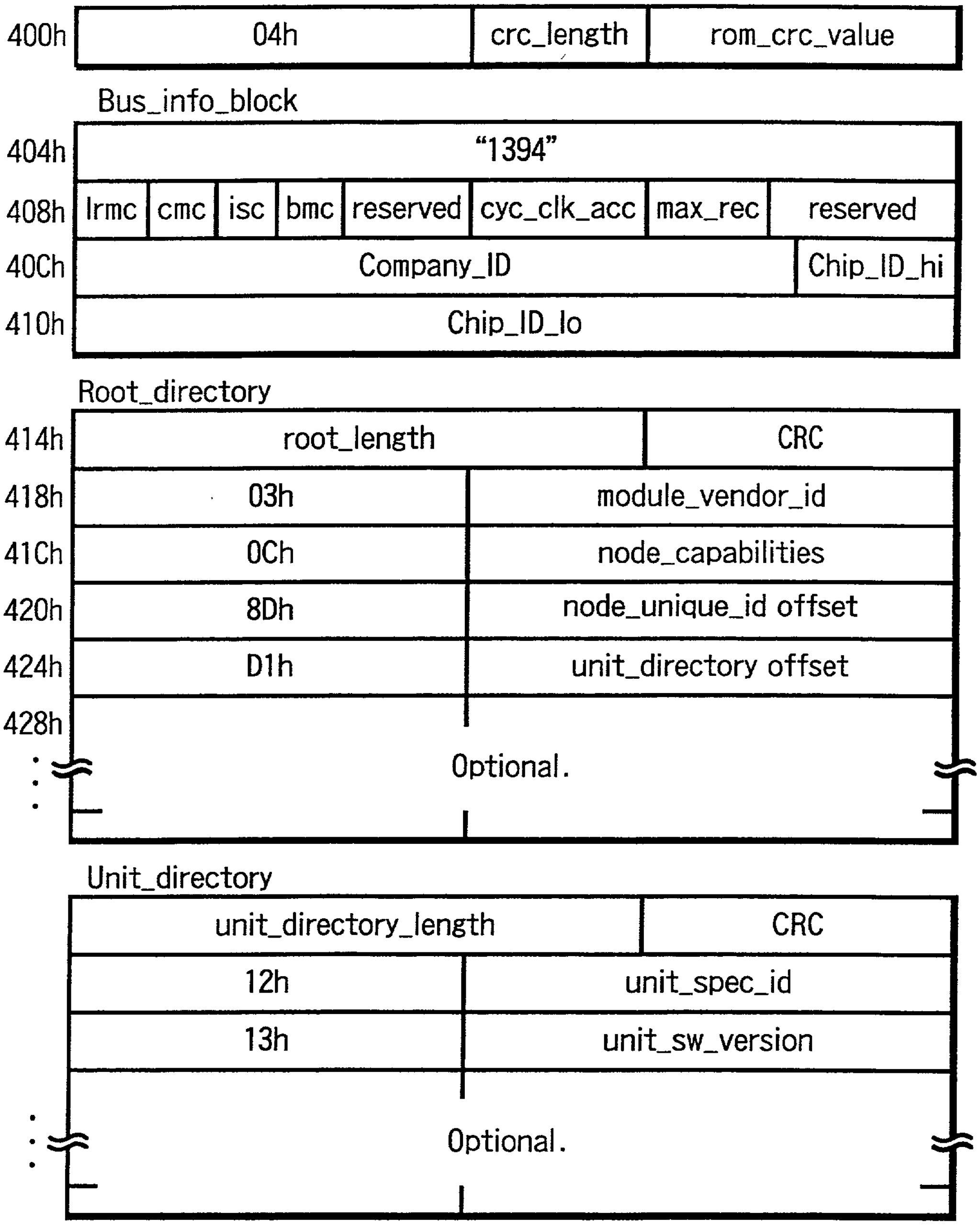
info_length
crc_length
rom_crc_value
info_length
bus_info_block
root_directory
unit_directories
root & unit leaves
vendor_dependent_information

FIG.10



900h
Output Master Plug Register
904h
Output Plug Control Register #0
908h
Output Plug Control Register #1
97Ch
Output Plug Control Register #30
980h
Input Master Plug Register
984h
Input Plug Control Register #0
988h
Input Plug Control Register #1
9FCh
Input Plug Control Register #30

FIG.9



<table>
<tr><td>400h</td><td>04h</td><td>crc_length</td><td colspan="6">rom_crc_value</td></tr>
</table>

Bus_info_block

<table>
<tr><td>404h</td><td colspan="8">"1394"</td></tr>
<tr><td>408h</td><td>lrmc</td><td>cmc</td><td>isc</td><td>bmc</td><td>reserved</td><td>cyc_clk_acc</td><td>max_rec</td><td>reserved</td></tr>
<tr><td>40Ch</td><td colspan="7">Company_ID</td><td>Chip_ID_hi</td></tr>
<tr><td>410h</td><td colspan="8">Chip_ID_lo</td></tr>
</table>

Root_directory

<table>
<tr><td>414h</td><td>root_length</td><td>CRC</td></tr>
<tr><td>418h</td><td>03h</td><td>module_vendor_id</td></tr>
<tr><td>41Ch</td><td>0Ch</td><td>node_capabilities</td></tr>
<tr><td>420h</td><td>8Dh</td><td>node_unique_id offset</td></tr>
<tr><td>424h</td><td>D1h</td><td>unit_directory offset</td></tr>
<tr><td>428h
⋮</td><td colspan="2">Optional.</td></tr>
</table>

Unit_directory

<table>
<tr><td>unit_directory_length</td><td>CRC</td></tr>
<tr><td>12h</td><td>unit_spec_id</td></tr>
<tr><td>13h</td><td>unit_sw_version</td></tr>
<tr><td colspan="2">Optional.</td></tr>
</table>

⋮

FIG. 11A

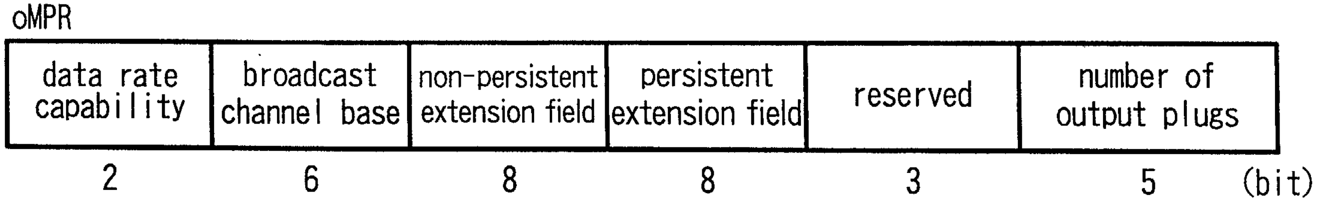


FIG. 11B

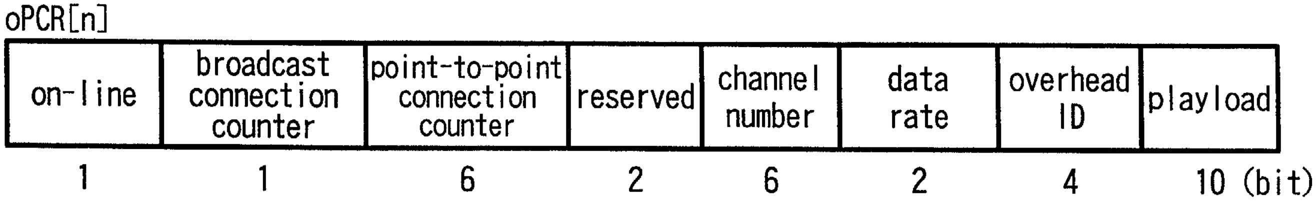


FIG. 11C

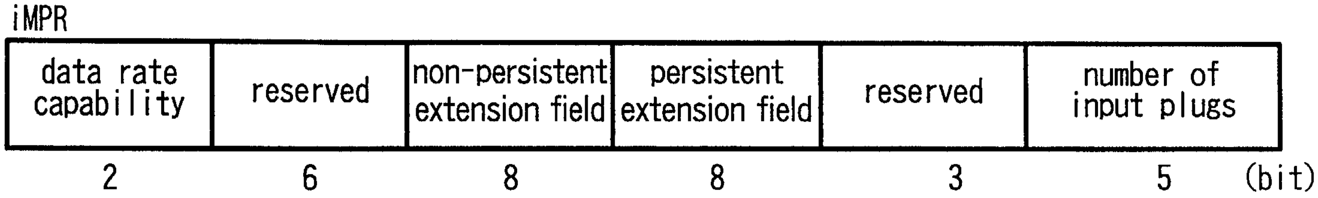


FIG. 11D

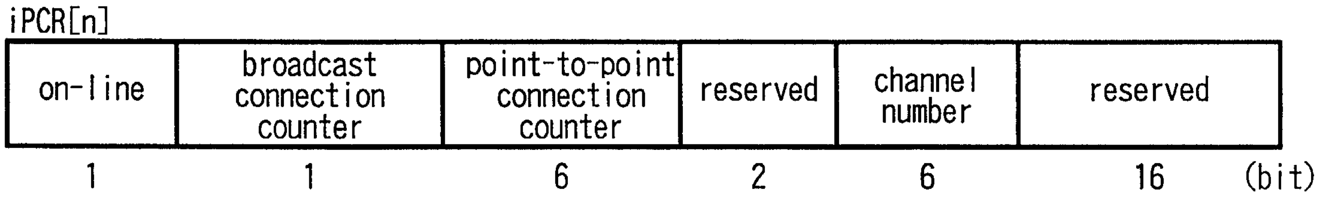


FIG. 12

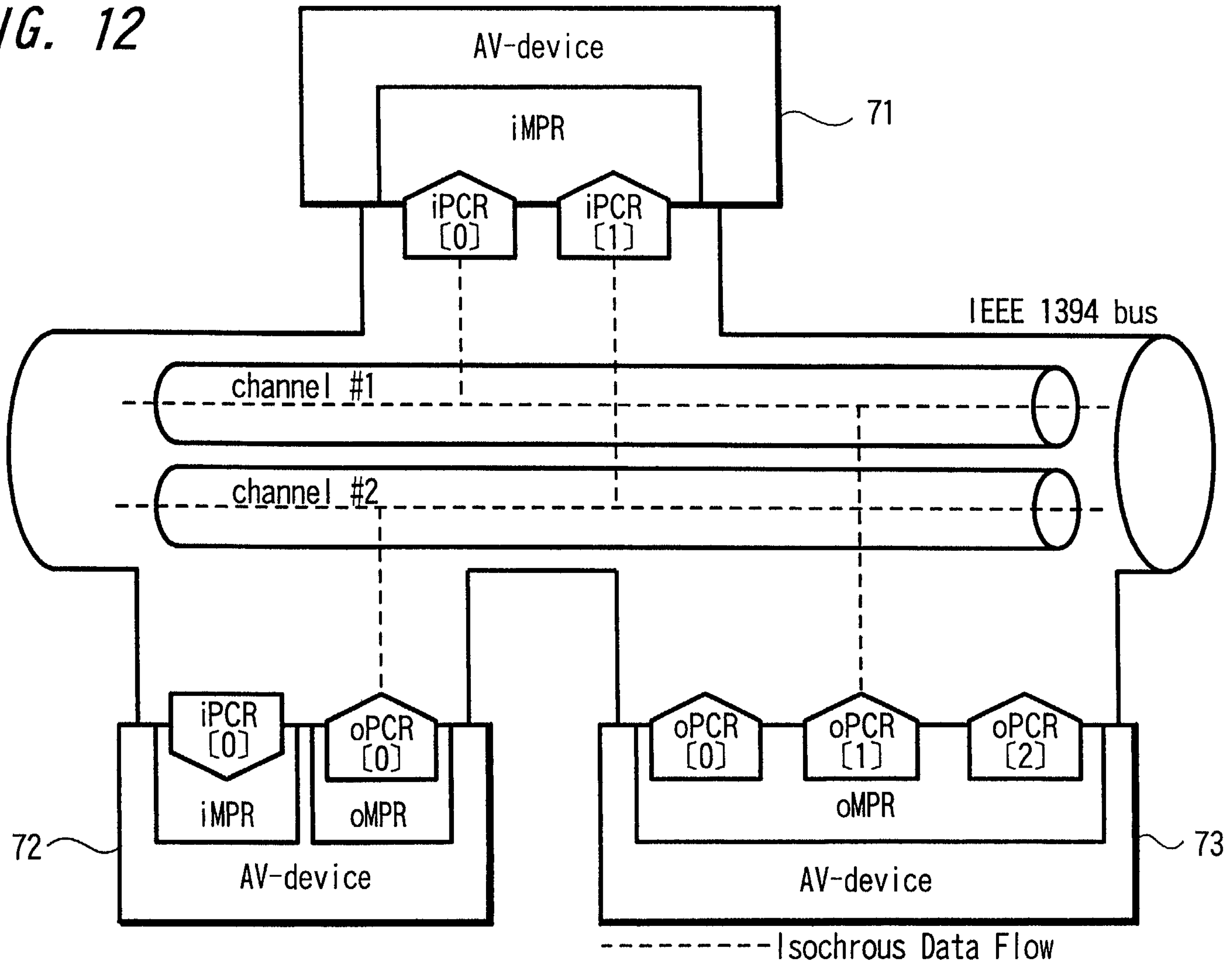

AV-device
iMPR
71
iPCR [0]
iPCR [1]
IEEE 1394 bus
channel #1
channel #2
iPCR [0]
oPCR [0]
iMPR
oMPR
72
AV-device
oPCR [0]
oPCR [1]
oPCR [2]
oMPR
73
AV-device
Isochrous Data Flow

FIG. 13

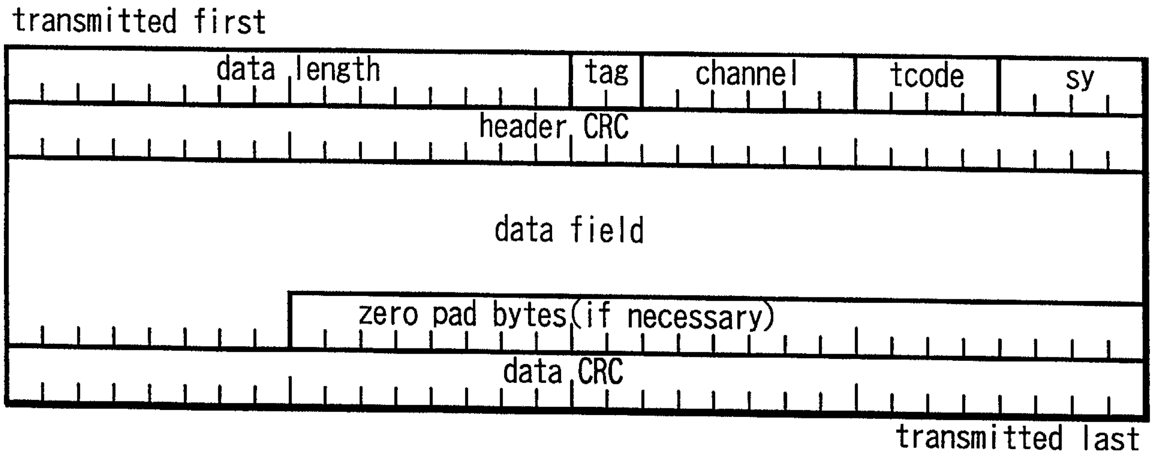

transmitted first
data length
tag
channel
tcode
sy
header CRC
data field
zero pad bytes(if necessary)
data CRC
transmitted last

FIG. 14

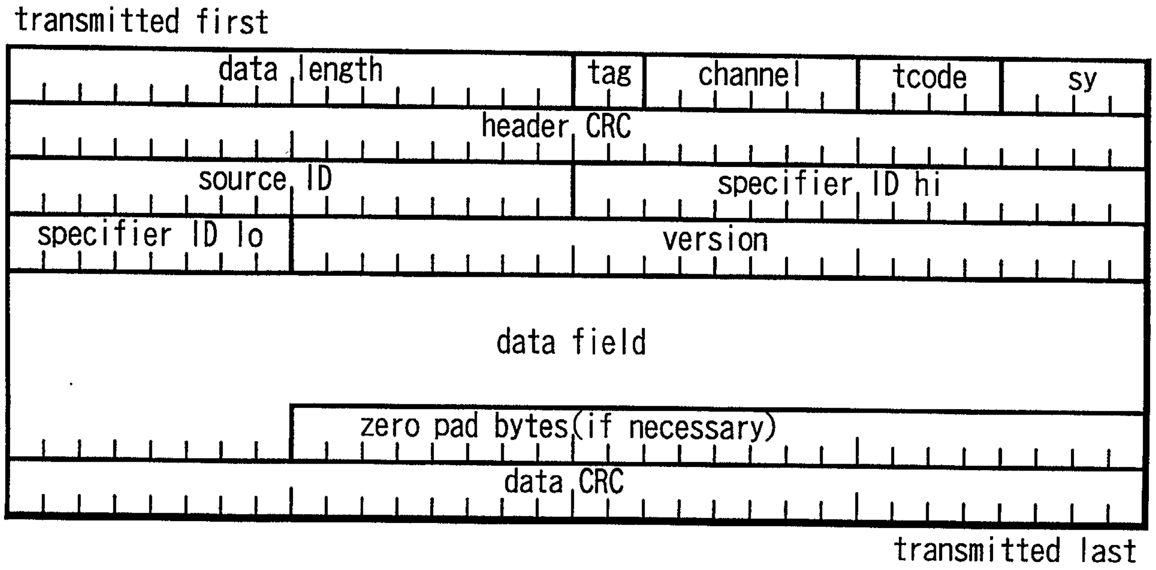

transmitted first
data length
tag
channel
tcode
sy
header CRC
source ID
specifier ID hi
specifier ID lo
version
data field
zero pad bytes(if necessary)
data CRC
transmitted last

FIG. 15

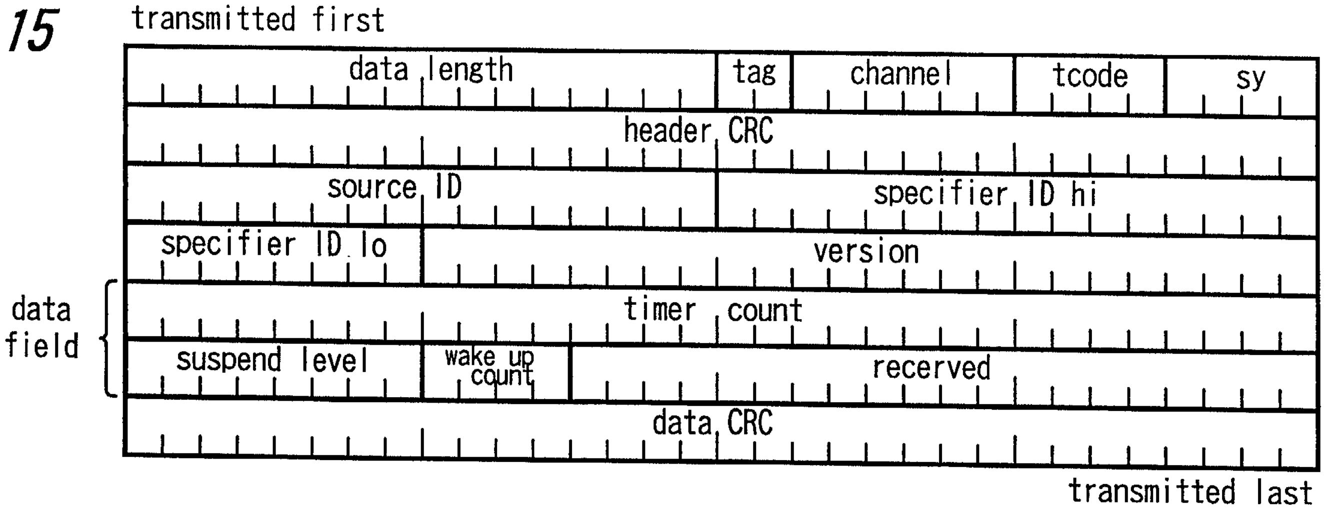

transmitted first
data length
tag
channel
tcode
sy
header CRC
source ID
specifier ID hi
specifier ID lo
version
timer count
suspend level
wake up count
recerved
data CRC
data field
transmitted last

FIG. 16

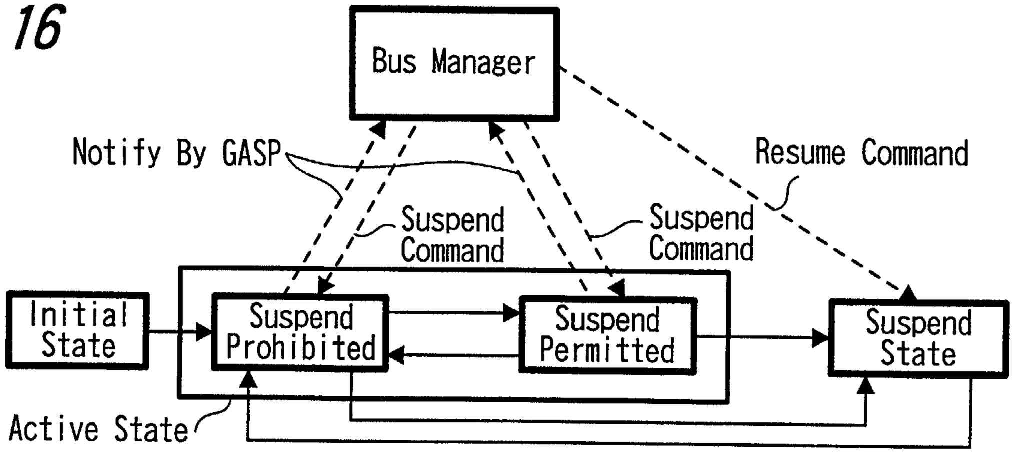

Bus Manager
Notify By GASP
Suspend Command
Suspend Command
Resume Command
Initial State
Suspend Prohibited
Suspend Permitted
Suspend State
Active State

FIG. 17

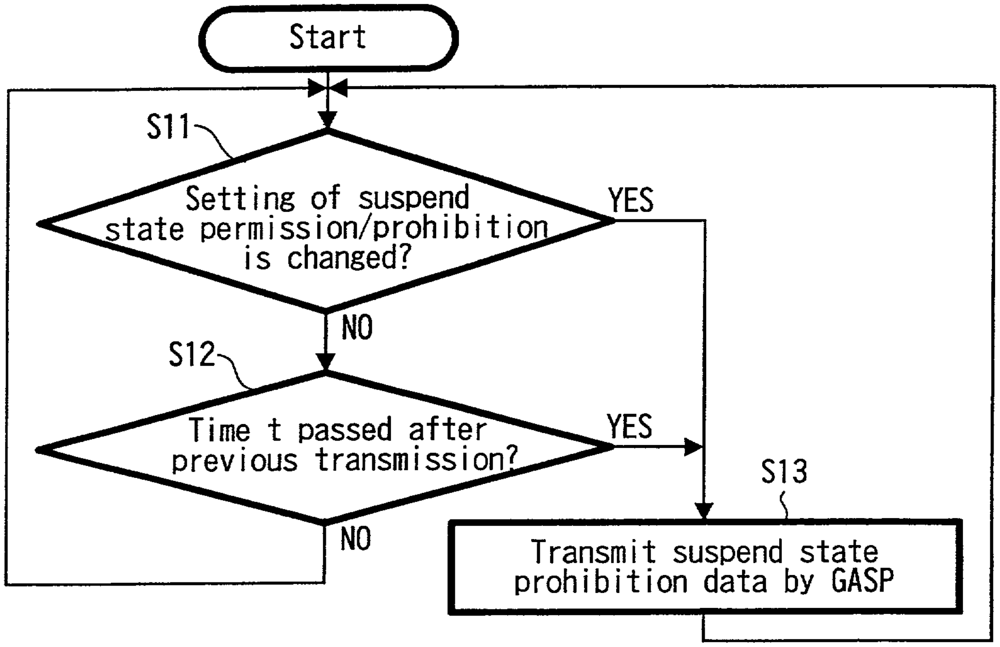

Start
S11
Setting of suspend state permission/prohibition is changed?
YES
NO
S12
Time t passed after previous transmission?
YES
NO
S13
Transmit suspend state prohibition data by GASP

FIG. 18

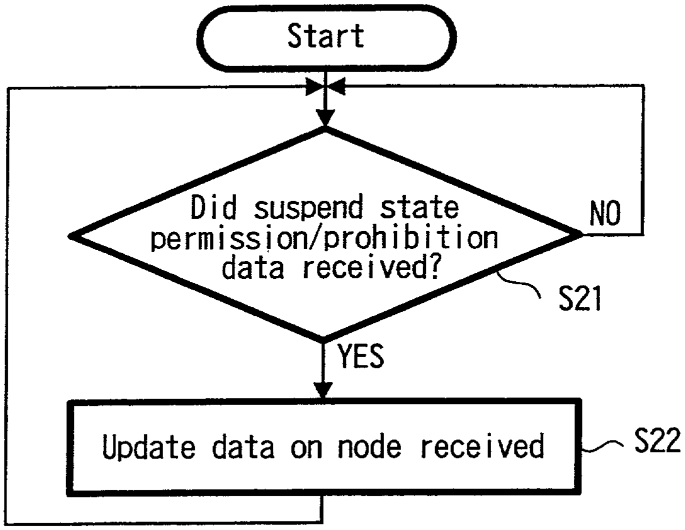

Start
Did suspend state permission/prohibition data received?
NO
S21
YES
Update data on node received
S22

FIG. 19

Node ID	Present State	Suspend Permission/ Prohibition	Priority	Leaf node ID
Node A	Active	Prohibited	1	Nodes B,E
Node B	Active	Permitted	1	Nodes C,D
Node C	Active	Permitted	2	None
Node D	Active	Permitted	1	Node F

FIG. 20